

WOOD AS A MATERIAL 3

THE STRENGTH OF WOOD

- ① Wood, *by weight*, is **stronger** than *steel*.
- ② One of woods most outstanding strength characteristics is its resilience. It resists **compression, tension, bending**, (the combination of compression and tension) **and shock** while maintaining its original shape.
- ③ This strength is the result of **cellular structure** of wood. What the cells are made of and how they link together are the basis for woods strength.

- ④ These strength characteristics make it an excellent choice for many applications, for example;

pressure:	building construction	tension:	bridges
bending:	furniture, musical instruments	shock:	sports equipment

- ⑤ Things that *decrease the strength* of wood are;

Defects;	Damage from improper drying, improper harvesting or storage, insects, fungus, and growth defects.
Fire;	Even though wood burns, it will retain most of its strength until almost 75% of its mass is burned.
Moisture;	Wood becomes pliable when wet. Water weakens the bond between the wood cells.

- ⑥ Things that *increase the strength* of wood are;

grain direction, lamination (plywood), proper joinery, good design, dryness.